SHORT REPORTS

Salmonella hadar peritonitis

In September 1979 an outbreak of food poisoning at a Norfolk holiday camp was caused by *Salmonella hadar*. Most of the 500 patients had mild diarrhoea and vomiting and were treated at the camp. Nevertheless, 30 became severely dehydrated and were admitted to hospital. Two of these patients subsequently developed *S hadar* peritonitis, a condition that has not been described.

Case reports

Case 1—A 78-year-old woman was admitted after two days' profuse diarrhoea. She had a history of congestive cardiac failure and rheumatic mitral stenosis, and was clinically dehydrated and feverish (38·6°C) with controlled atrial fibrillation. Haemoglobin 10·7 g/dl, white cell count $7·9 \times 10^9$/l, blood urea concentration 7·8 mmol/l (47 mg/100 ml). *S hadar* was cultured from faeces. The patient was treated intravenously with fluids and antidiarrhoeal agents but on day 6 developed abdominal tenderness and distension. Her general condition deteriorated and *x*-ray examination showed free intraperitoneal gas. At laparotomy there was diffuse peritonitis and the ascending colon was particularly friable with multiple tiny perforations exuding fluid faeces. A right hemicolectomy was performed, the divided ends were ulcerated, oedematous, and friable, and unsuitable for primary anastomosis. The terminal ileum and proximal end of the transverse colon were brought out through the abdominal wall. Despite ventilation and intensive care she died 18 hours later.

Case 2—An 81-year-old woman was admitted after four days' diarrhoea. She had had a myocardial infarction and congestive cardiac failure and was clinically dehydrated and in atrial fibrillation. Haemoglobin was 14·4 g/dl, white cell count $6·8 \times 10^9$/l, and blood urea concentration 26·2 mmol/l (157 mg/100 ml). *S hadar* was isolated from faeces. The patient responded well to rehydration and antidiarrhoeal agents. On day 7 her abdomen became tender and distended with no bowel sounds. Abdominal *x*-ray examination showed dilated loops of bowel with fluid levels. Her condition deteriorated and at laparotomy 48 hours later she had gross peritonitis with acute inflammation of the jejunum, ileum, and appendix with multiple small perforations. Two separate segments of ileum were resected and appendicectomy performed. The cut ends were friable and oedematous; nevertheless, one end-to-end anastomosis was performed and two ends were brought out as separate ileostomies. She was ventilated and intravenously fed, but died of acute on chronic renal failure four weeks later. Histology of the resected bowel showed focal and confluent areas of mucosal necrosis not associated with Peyer's patches. There was extensive infiltration with histiocytes and polymorphs. The sites of perforation could not be demonstrated microscopically. The patient had salmonella endocarditis of the mitral valve.

Comment

In man salmonella infection of the food poisoning type affects the large and small bowel.[1-4] Necropsies carried out on patients who died of salmonellosis have disclosed extensive ulceration, necrolysis, infarction, and toxic dilatation of the large bowel.[2 4 5] Peritonitis has been recorded.[2] Unlike *S hadar* peritonitis, *S typhi* peritonitis is due to perforation of Peyer's patches.

Both our patients with *S hadar* food poisoning developed extensive inflammation throughout the small and large bowel with multiple perforations and peritonitis. Both were elderly and suffered from heart disease. Possibly this was associated with intestinal vascular insufficiency which contributed towards the perforations. *S hadar* is a low-grade pathogen among fowl and endemic in many poultry flocks. It has been increasingly reported as a cause of food poisoning in man, but has not been reported to cause bowel perforation. *S hadar* may produce a serious illness in elderly and debilitated patients.

We thank Mr A Cameron, Mr J F Colin, Dr P Roberts, and Dr W Shepherd for their help.

[1] Mandel BK, Mani V. Colonic involvement in salmonellosis. *Lancet* 1976;i:887-8.
[2] Applebaum PC, Scragg J, Schonland MM. Colonic involvement in salmonellosis. *Lancet* 1976;ii:102.
[3] Boyd JF. Salmonella typhimurium, colitis and pancreatitis. *Lancet* 1969;ii:901-2.
[4] Boyd JF. Colonic involvement in salmonellosis. *Lancet* 1976;i:1415.
[5] Dickenson RJ, Pickens S. Morbidity and mortality in salmonella food poisoning. *Scot Med J* 1964;**23**:23-6, 144-57.

(*Accepted 28 April 1980*)

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Penile injuries from vacuum cleaners

We report four cases of penile injury sustained when using a vacuum cleaner, probably in search of sexual excitement.

Case reports

Case 1—A 60-year-old man said that he was changing the plug of his Hoover Dustette vacuum cleaner in the nude while his wife was out shopping. It "turned itself on" and caught his penis, causing tears around the external meatus and deeply lacerating the side of the glans. The external meatus was reconstructed and the multiple lacerations of the glans repaired with catgut. The final result was some scarring of the glans, but the foreskin moved easily over it.

Case 2—A 65-year-old railway signalman was in his signal box when he bent down to pick up his tools and "caught his penis in a Hoover Dustette, which happened to be switched on." He suffered extensive lacerations to the glans, which were repaired with catgut with a good result.

Case 3—A 49-year-old man was vacuuming his friend's staircase in a loose-fitting dressing gown, when, intending to switch the machine off, he leaned across to reach the plug: "at that moment his dressing gown became undone and his penis was sucked into the vacuum cleaner." Because he had a phimosis he suffered multiple lacerations to the foreskin as well as lacerations to the distal part of the shaft of the penis, including the external meatus. His wounds were repaired with catgut and the phimosis reduced with a dorsal slit.

Case 4—This patient was aged 68, and no history was available except that the injury was caused by a vacuum cleaner. The injury extended through the corpora cavernosa and the corpus spongiosum and caused complete division of the urethra proximal to the corona. A two-stage urethroplasty was performed, and the final result was satisfactory.

Comment

Except for the patient with phimosis, the injuries sustained by these patients were mostly lacerations to the glans penis, presumably because the foreskin was retracted at the time. In case 4 the injury was more extensive and required a two-stage urethroplasty. We were surprised that none of the other patients suffered similarly severe injuries. A meatal stricture has been reported after this type of injury.[1]

At least two of these injuries were caused by a Hoover Dustette, which has fan blades about 15 cm from the inlet. The present patients may well have thought that the penis would be clear of the fan but were driven to new lengths by the novelty of the experience and came to grief.

We thank Mr T J Davenport and Mr C J Anders, St Peter's Hospital, Chertsey, Surrey, and Mr J A Fox, Edgware General Hospital, Middlesex, for permission to report on their patients.

[1] Zufall R. Laceration of penis from hand vacuum cleaner. *JAMA* 1973; **224**:630.

(*Accepted 24 March 1980*)

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